Intelligent Mailbox System
Version 1.0

User Manual
11/30/05

©Digital System Senior Design ECE477 Team 5 Fall 2005
All Rights Reserved

Table of Contents

Section	Title	Page
Section 1	Product Description	2
Section 2	Product Illustration	3
Section 3	Product Setup	6
Section 4	Product Use	7
Section 5	Troubleshooting	12
Section 6	Product Support Information	14

1. Product Description

Congratulations on the purchase of the IMS, the latest release of biometric security mailbox system in large scale residences. We are glad that you have taken the first step to offer your residents the convenience of IMS!

The IMS has a number of features that distinguish itself from normal mailbox systems. The IMS features a biometric security system, allowing the residents to simply do a finger scan to unlock the mailbox door rather than going through the headache of turn-locks or key-based locks. No need to worry about remembering that lock combination or bringing that key. The IMS lock features an electrically controlled solenoid lock. All that your residents have to do after scanning their finger is simply opening it. Your residents will be pleasantly surprised.

Got an internet connection? The IMS notifies the residents through an e-mail when there is a new mail arrival or a new package arrival. No need for your residents to go through all the trouble of making special trips down to the mailbox area; only to find out that there isn't anything new.

You, as the manager of this mailbox system can be sure to enjoy the benefits also. You can add and remove users from the built-in website. This website also allows you to manage different packages. When there is a new package, simply press the package button of the corresponding mailbox to notify the resident. No more wasted paper by the package notification slips.

Aren't you convinced that your residents are going to love you for this? Let them enjoy the new fun experience of picking up mails and packages.

2. Product Illustration

The following illustrates all user interfaces incorporated with Intelligent Mailbox System

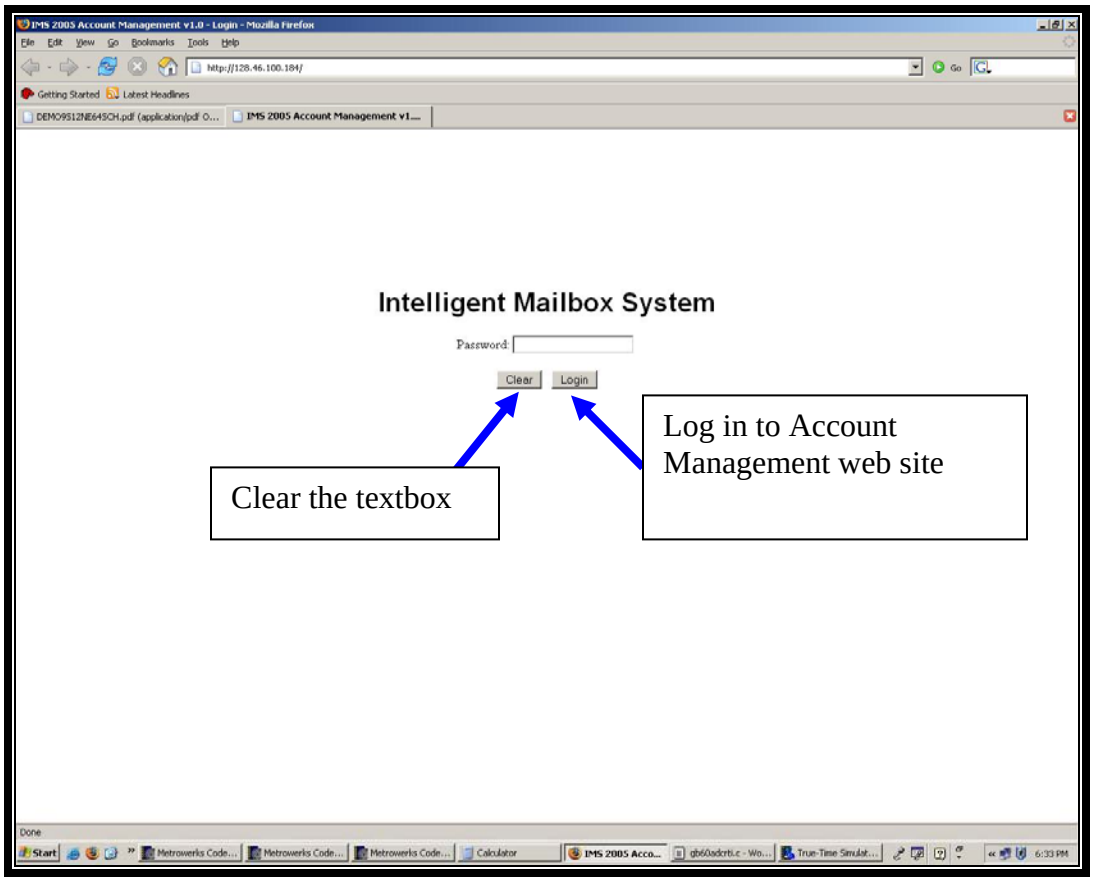

Figure 1. IMS Login Page

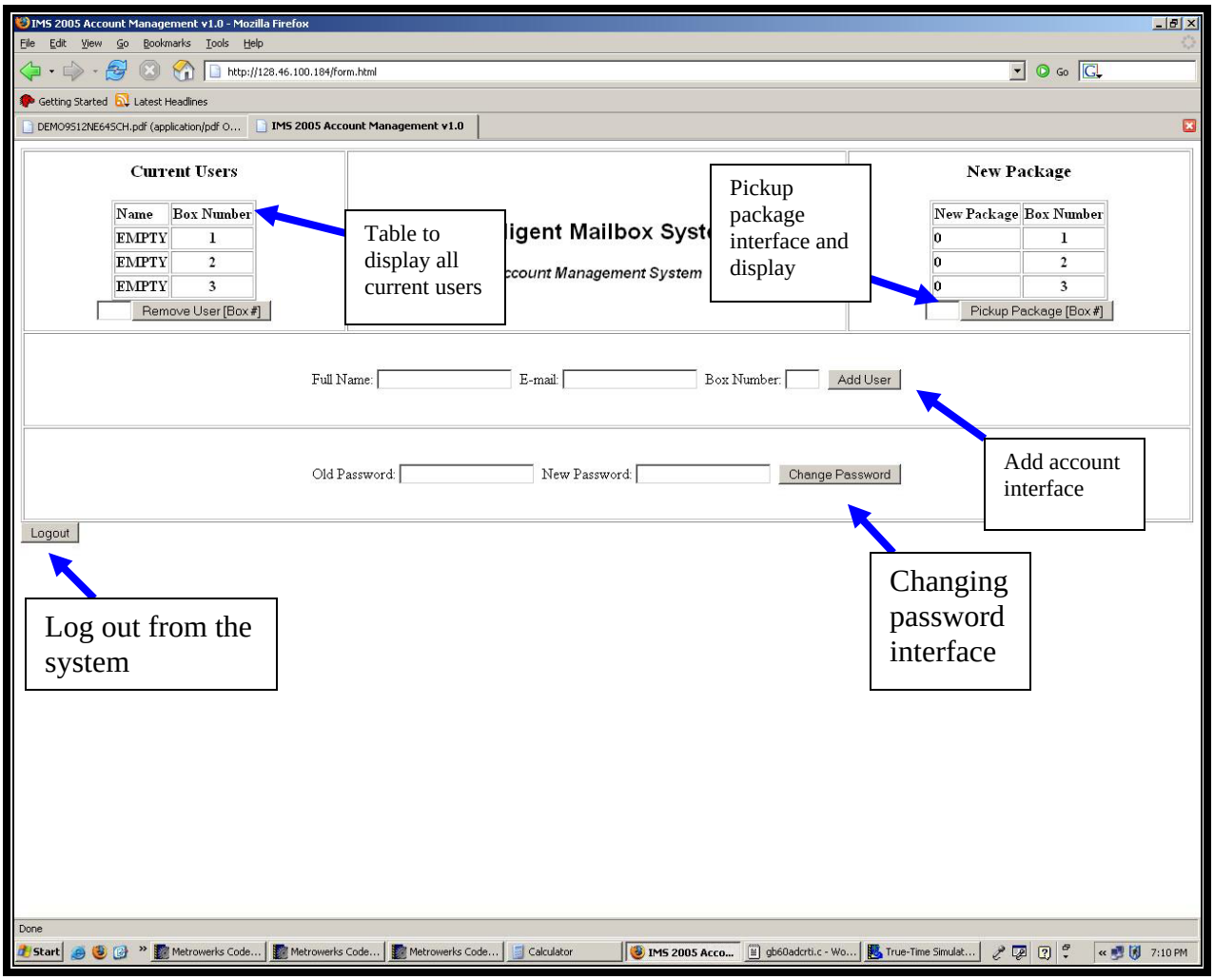

Figure 2. IMS Account Management Main Page

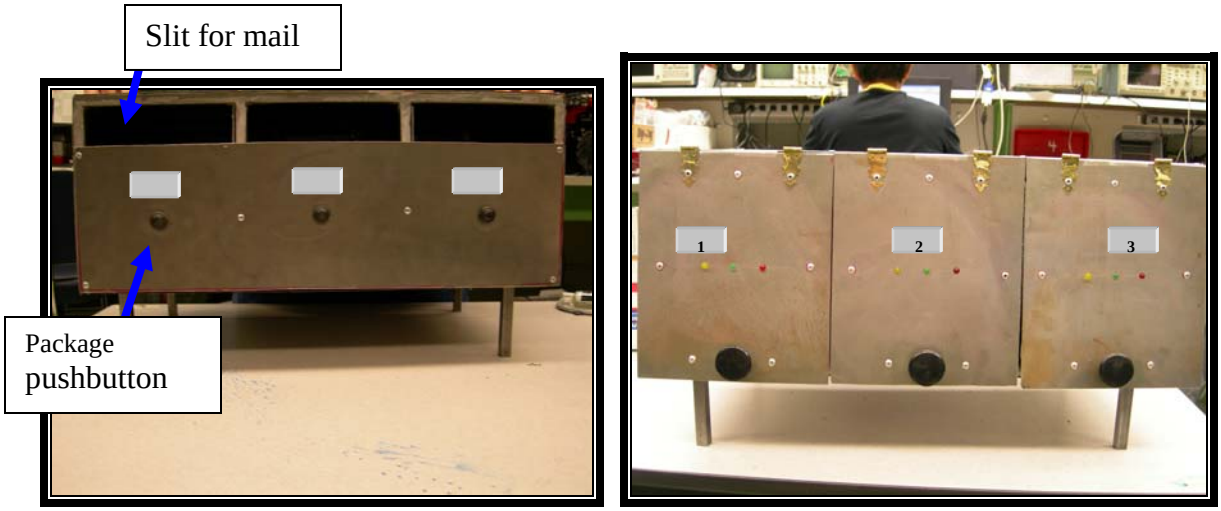

Figure 3. IMS mailboxes front and back view

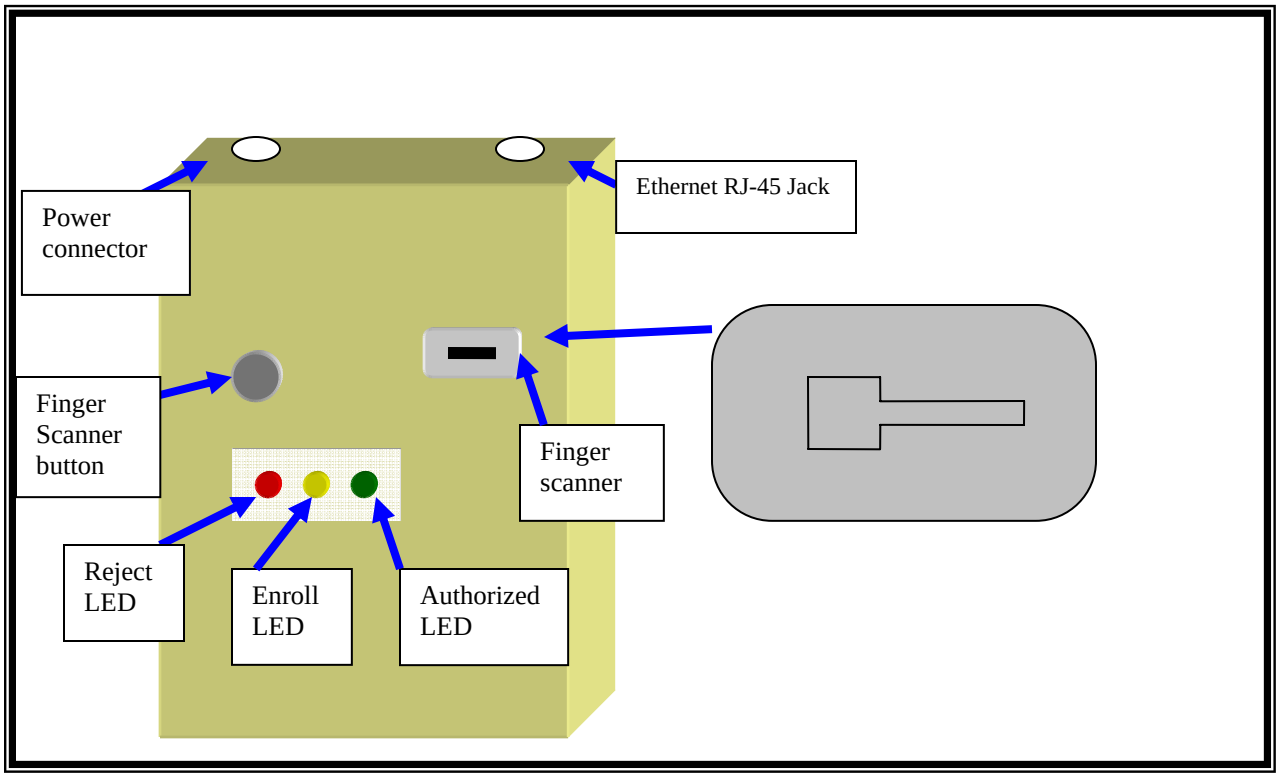

Figure 4. Controller box interface

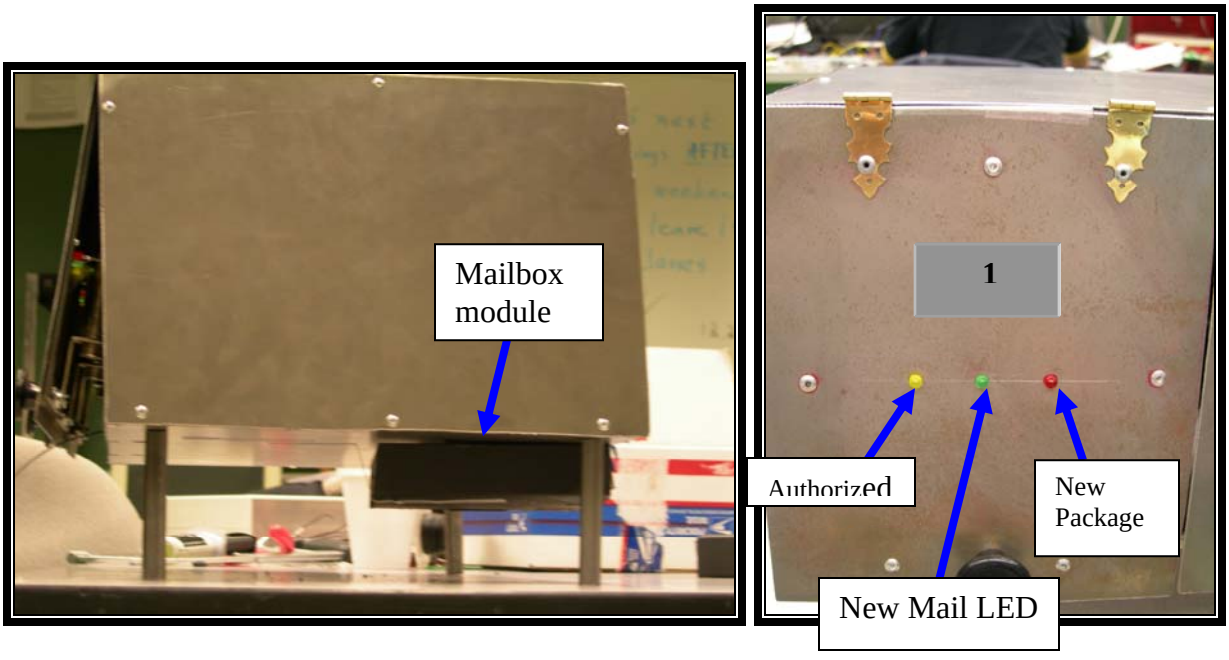

Figure 5. Mailboxes module and LED interface

3. Product Setup

The following steps will guide you through the process of setting up your Intelligent Mailbox System.

1. Connect all the cables to its corresponding connectors on each of the enclosures. In order to make this process an easy task, all the connectors for sensors and other components are easily visible from the outside of the mailbox module enclosure. The mailbox module is located under each of the mailboxes. There are labels on each cable that corresponds to the connectors on the box.
2. Once all the cables from the mailbox modules are identified and connected to the controller box, plug in the Ethernet cable to the Ethernet jack, which can be found in the main controller box.
3. Our IMS maintenance team will need to set up the system environment and also the network IP configuration for the system without extra cost. This will include a domain name of your choice, provided that it is not taken, which points to the fixed IP address allotted to the web server. The IP configuration of IMS cannot be done by the customer as special tools are necessary to flash the product manually.
4. Every purchase of the IMS system will be provided an email account for the account management system. This email account will be the return email address for all the email notifications sent out by the IMS system. For further information about setting up the account and IMS system please contact the IMS Product Support.
5. Now your IMS is ready to be used. Connect the provided adapters to the mailbox modules' power connectors and main controller's power connector. Make sure that the

main controller box uses the 5 V adapter and each of the external mailbox modules uses the 12 V adapter.

4. Product Usage

The following section outlines the basic use of the Intelligent Mailbox System.

4.1. Login to the user account management system

After setup is completed, have your internet connection ready so that you can start using your IMS system immediately by connecting to your machine's IP address that serve this system through your favorite web browser. In the example below, the user connects to the web server's IP address; 128.46.100.184 which will bring you to the login page of IMS. Fill in your preset password to login to the account management website which is given to you when you bought this system from IMS. The default password would be ***"IMS"*** and we strongly recommend you to change this password immediately after your first login for security purposes. After changing your password, make sure you remember your new password as you will need it to login to IMS account management website every time. We recommend you to change your password every 3 months for security purpose.

IMS 2005 Account Management v1.0 - Login - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
http://128.46.100.184/
Getting Started
Latest Headlines
DEMO9S12NE64SCH.pdf (application/pdf O...
IMS 2005 Account Management v1....

Figure 6. Acessing the IMS login page

4.2. Add mailbox owner

To add new mailbox owner, fill in the text boxes for the full name, email and box number which will be assigned. Click the add user button when you're done. After that, the new owner needs to enroll his/her fingerprint in the controller box. Wait until the yellow "enrolled LED" is illuminated and then **slide** one of the new owner's fingers until the Enrolled LED turns off. The name of the new owner will be displayed on the current users table. The mailbox user will need to use that particular finger to authenticate him or herself in order to access the mailbox.

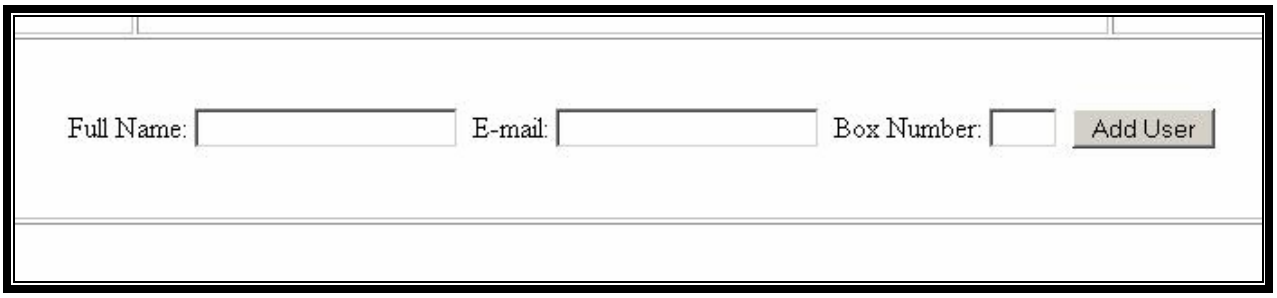

Figure 7. Add owner interface

Figure 8. Finger scan process

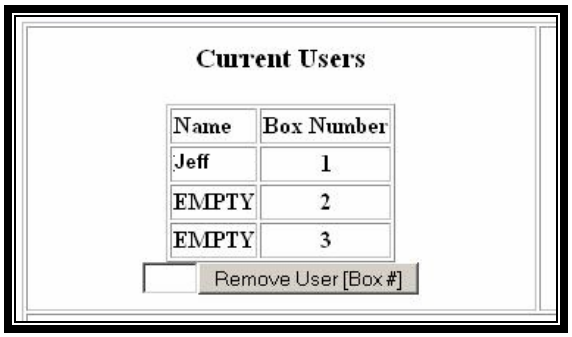

Figure 9. Current User table after add new user

4.3. Remove Mailbox owner

To remove mailbox owner, fill in the text box under the Current Users table for the box number which will be removed. Click the remove user button when you're ready. After that, the removed owner's name will not be displayed in the Current users table anymore.

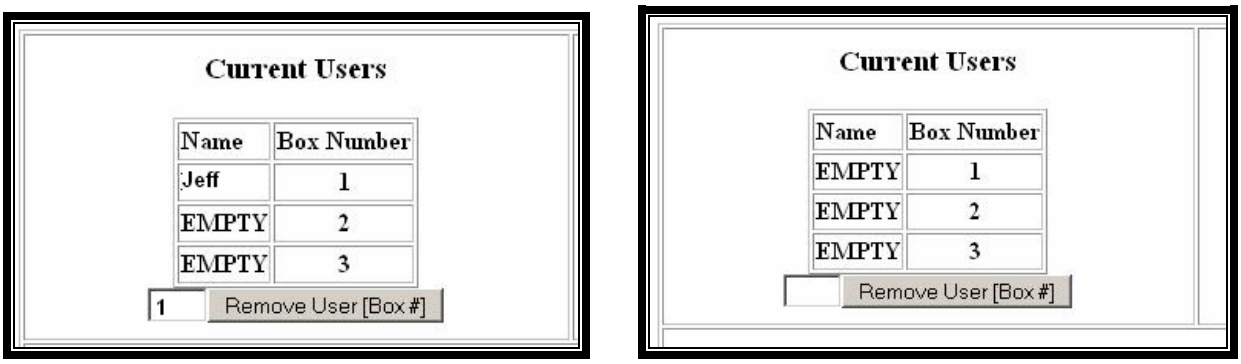

Figure 10. Current Users table after and before the removal of the owner

4.4. Mail notification and package notification

When new mails arrive, the mailman or the mailroom attendant need to slide in the mail to the appropriate mailbox and IMS will automatically send an email notification to the owner. At the same time, the green "new mail" LED at the corresponding mailbox will turn on so that if the owner is near the mailbox, he or she will know whether there is a new mail or not by just looking at the LED. For new package the mail attendant is required to press the button at the corresponding box and IMS will automatically send an email notification to the owner and also illuminates the red "new package" LED at the corresponding mailbox. The account management website will be updated with the new information. The Package Table shows the number of packages currently unclaimed by the owner.

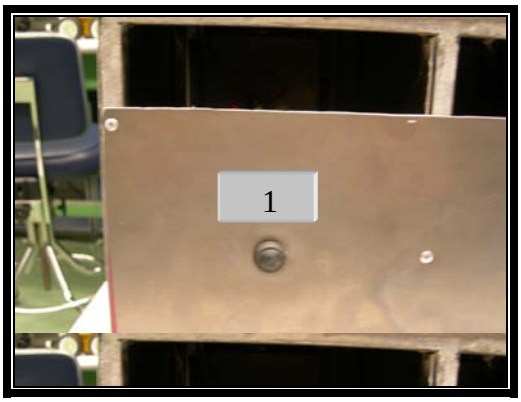

Figure 11. Slit and pushbutton at each mailbox

Figure 12. Package table updated

4.5. Package Pickup

When the owner comes to claim a package, the owner needs to scan his/her finger to identify him or herself. The mailroom attendant could then fill in the box number in the "new package table" and click on the pickup button to acknowledge that the owner has taken the package. The Package Table will then be updated with the current information.

4.6. Mail pickup

To open the mailbox, the owner needs to press the pushbutton that resides at the controller box before scanning his/her finger. If the owner is authenticated, the green "authorized" LED will light up and the owner's mailbox door will be unlocked. If for some reason the red "rejected" LED lights up, the owner needs to redo the process again.

CAUTION: Solenoid could become warm if the mailbox door is opened for a long time.

4.7. Changing password

To change the password, you need to fill in the old and the new password in the text boxes. Click on the change password button when finished.

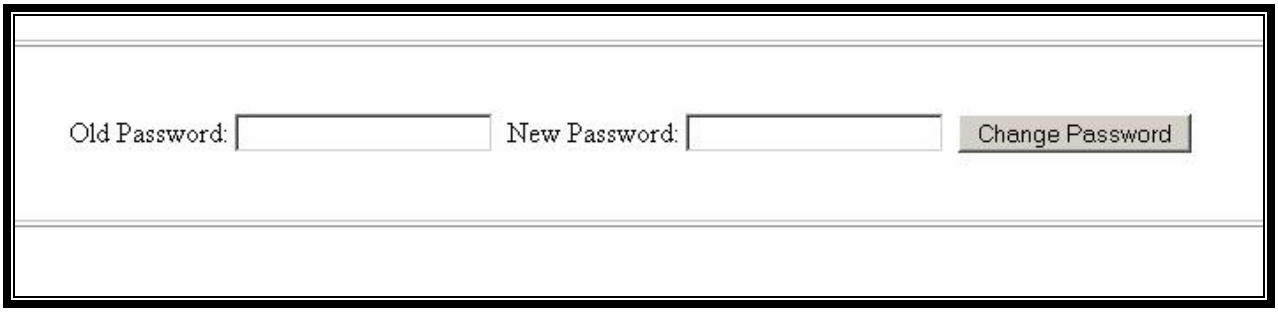

Figure 13. Changing password interface

If the password is successfully changed then the following screen will appear briefly and will be redirected to the main page again. Remember your new password as you will need it whenever you want to login to the account management system.

Figure 14. Password changed screen

5. Troubleshooting

The following section contains troubleshooting tips. If the problem persists, contact our customer service. See the Product Support Information section of this user manual for our customer service department contact information.

5.1. The IMS does not recognize user's finger:

- Make sure that the user is enrolled.
- Try slide the finger slowly. Scanning too fast can cause the IMS to not recognize the image correctly.
- Scan with the same finger which is used to enroll.

5.2. The IMS does not send e-mails when there is new mail or new package:

- Verify that the intended e-mail address is added correctly.
- Please check that there are no loose connections around sensors and the controller box.

5.3. Upon a successful scan, the green light turns on, but the door does not unlock:

- Check the connection around the solenoid and the mailboxes.

5.3. The website does not open:

- Check the power and network connection on the main box and your network configuration.
- It could also happen because of the lost connection with the mailboxes. Try to check all connection from the controller box to the mailboxes.

5.4. The solenoid lock gets hot:

- The solenoid lock is sealed for a reason, and it should not overheat to a point where it stops operating correctly. If it does get excessively hot, please turn the power off, and contact the IMS trouble shooting team.

6. Product Support Information

IMS provides easy access to technical support information through a variety of services. This service provides access to support information such as technical documentation, as well as support options for technical maintenance. Contact information contained in this document is correct at time of publication. For the very latest information, IMS recommends that you access the IMS World Wide Web site.

IMS Product Support Center

Mail:

IMS Support Center
1000 W. Stadium Avenue
West Lafayette, IN 47906-4236
United States of America

URL: http://shay.ecn.purdue.edu/~477grp5
Email: 477grp5@ecn.purdue.edu

Phone: 1-800-IMS-HELP (1-800-467-4357)